

CLAIMS

1. A moving picture data processing method for extracting a portion of moving picture data from moving picture data, the method comprising:

a frame picture evaluation step of evaluating each of a plurality of frame picture data included in the moving picture data on a basis of a specific condition, for generating first picture evaluation values depending on the evaluations; and

a moving picture data extraction step of extracting moving picture data including a plurality of frame picture data that meet a specific condition, in response to the first picture evaluation values.

2. The moving picture data processing method in accordance with Claim 1, further comprising:

an acquiring step of acquiring the moving picture data, wherein

the moving picture data extraction step includes the step of extracting at least one frame group that is a collection of chronologically consecutive frame picture data, from among the frame picture data having at least one of the first evaluation value and a change of the first evaluation value, the one meeting a specific condition, wherein

the method further comprises a digest moving picture data generation step of generating digest moving picture data using at least a portion of the extracted frame group.

3. The moving picture data processing method in accordance with Claim 2, further comprising:

a dividing step of dividing the moving picture data to establish a plurality of scenes, each of the plurality of scenes containing a plurality of frames of the picture data, wherein

the moving picture data extraction step includes the step of extracting at least one of the frame groups from each of the scenes.

4. The moving picture data processing method in accordance with Claim 3, wherein

the dividing step includes the step of dividing the moving picture data based on a discontinuous change in the first evaluation value.

5. The moving picture data processing method in accordance with Claim 2, wherein

the specific condition is that the first evaluation value is at least equal to a specific threshold value.

6. The moving picture data processing method in accordance with Claim 5, further comprising:

a playback time input step of inputting a desired value of playback time of the digest moving picture data; and

an adjusting step of adjusting the threshold value in response to the desired value of playback time.

7. The moving picture data processing method in accordance with Claim 2, further comprising:

the moving picture data extraction step includes the step of extracting a frame group whose rate of change of the first evaluation value is at least 0.

8. The moving picture data processing method in accordance with Claim 2, wherein

the moving picture data extraction step includes the step of assembling two frame groups and all frame picture data between the two frame groups, a time interval between the two frame groups being smaller than a specific value, for extracting as a single frame group.

9. The moving picture data processing method in accordance with Claim 8, further comprising:

a scene dividing step of dividing the moving picture data to establish a plurality of scenes, each of the plurality of scenes containing a plurality of the frame picture data, wherein

the moving picture data extraction step further includes the step of extracting the two frame groups and all frame picture data between the two frame groups as a single frame group, when the two frame groups and the all frame picture data between the two frame groups are within the same scene.

10. The moving picture data processing method in accordance with Claim 2, wherein

the moving picture data extraction step includes the step of the frame group composed of at least a specific number of frame picture data.

11. The moving picture data processing method in accordance with any of Claims 2 to 10, wherein

the frame picture evaluation step includes the step of calculating the first evaluation value using a motion vector calculated by comparing two frames of picture data that include the frame picture data targeted for calculation of the first evaluation value.

12. The moving picture data processing method in accordance with Claim 1, further comprising:

a moving picture evaluation step of generating a second picture evaluation value for each of the plurality of frame picture data, in response to the first picture evaluation value of each of the plurality of frame picture data and to the chronological rate of change of the first evaluation value of each of the plurality of frame picture data, wherein

the moving picture data extraction step includes the step of extracting moving picture data composed of the plurality of frame picture data whose second evaluation values are greater than a specific threshold

value from the moving picture data, based on the second picture evaluation value.

13. The moving picture data processing method in accordance with Claim 12, wherein

the moving picture data extraction step has an evaluation mode wherein an elevated value of the first picture evaluation value of the plurality of frame picture data whose chronological rate of change of the first evaluation value is positive is designated as the second picture evaluation value.

14. The moving picture data processing method in accordance with any of Claims 12 and 13, wherein

the moving picture data extraction step has an evaluation mode wherein an lowered value of the first picture evaluation value of the plurality of frame picture data whose chronological rate of change of the first evaluation value is negative is designated as the second picture evaluation value.

15. The moving picture data processing method in accordance with any of Claims 12 to 14, wherein

the moving picture data extraction step has an evaluation mode wherein the sum of the first picture evaluation value and a value derived by multiplying the chronological rate of change of the first picture evaluation value by a specific positive coefficient is designated as the second picture evaluation value.

16. The moving picture data processing method in accordance with Claims 15, wherein

the specific positive coefficient is a value of less than 1.

17. The moving picture data processing method in accordance with any of Claims 12 to 16, wherein

the moving picture data extraction step has an evaluation mode for extracting moving picture data composed of the plurality of frame picture data whose second picture evaluation value is greater than a threshold value, the moving picture data also having playback time longer than a specific time from the moving picture data, based on the second picture evaluation value.

18. The moving picture data processing method in accordance with any of Claims 12 to 17, further comprising:

a scene dividing step of dividing the moving picture data on a scene to scene basis, wherein

the moving picture data extraction step includes the step of extracting with respect to each scene.

19. The moving picture data processing method in accordance with Claims 18, wherein

the moving picture data extraction step includes the step of calculating, with respect to each scene, an average value of at least one of the first picture evaluation value and the second picture evaluation value, and vary the specific threshold value with respect to the each scene based on the average value.

20. A digest moving picture data generating method for generating digest moving picture data by extracting a portion from moving picture data, the method comprising:

the moving picture data processing method in accordance with any of Claims 12 to 19; and

a moving picture data concatenation step of concatenating the plurality of moving picture data to generate the digest moving picture data when the plurality of moving picture data are extracted.

21. The moving picture data processing method in accordance with Claims 20, wherein

the moving picture data concatenation step has a concatenation mode for concatenating chronologically the extracted plurality of moving picture data.

22. The moving picture data processing method in accordance with any of Claims 20 and 21, wherein

the moving picture data concatenation step has a concatenation mode for concatenating the extracted plurality of moving picture data, in an order determined with reference to at least one of the first picture evaluation value and second picture evaluation value of the plurality of frame picture data making up each of the extracted plurality of moving picture data.

23. A printing method for printing on a recording medium storing moving picture data, comprising:

the moving picture data processing method in accordance with any of Claims 1 to 19; and

a printing step of printing on the recording medium in response to at least a portion of the plurality of frame picture data.

24. A recording method for recording moving picture data and attribute information of the moving picture data into a recording medium, comprising:

recording the moving picture data into the recording medium;

the moving picture data processing method in accordance with any of Claims 1 to 19;

generating the attribute information including data generated in response to at least a portion of the plurality of frame picture data; and

recording the generated attribute information into the recording medium.

25. A moving picture data processing apparatus for extracting a portion of moving picture data from moving picture data, the apparatus comprising:

a frame picture evaluator that evaluates each of a plurality of frame picture data included in the moving picture data on a basis of a specific condition, for generating first picture evaluation values depending on the evaluations; and

a moving picture data extractor that extracts moving picture data including a plurality of frame picture data that meet a specific condition, in response to the first picture evaluation values.

26. A printing apparatus for printing on a recording medium storing moving picture data, comprising:

a frame picture evaluator that evaluates each of a plurality of frame picture data included in the moving picture data on a basis of a specific condition, for generating first picture evaluation values depending on the evaluations;

a moving picture data extractor that extracts frame picture data that meet a specific condition, in response to the first picture evaluation values; and

a printing unit that prints on the recording medium in response to the frame picture data.

27. A computer program for causing a computer to extract a portion of moving picture data from moving picture data, the computer program comprising:

a program for the computer to evaluate each of a plurality of frame picture data included in the moving picture data on a basis of a specific

condition, for generating first picture evaluation values depending on the evaluations; and

a program for the computer to extract moving picture data including a plurality of frame picture data that meet a specific condition, in response to the first picture evaluation values.

28. A computer program for causing a computer to print on a recording medium storing moving picture data, the computer program comprising:

a program for the computer to evaluate each of a plurality of frame picture data included in the moving picture data on a basis of a specific condition, for generating first picture evaluation values depending on the evaluations;

a program for the computer to extract frame picture data that meet a specific condition, in response to the first picture evaluation values; and

a program for the computer to print on the recording medium in response to the frame picture data.

29. A computer program product for causing a computer to generate an image file, the computer program product comprising:

a computer readable medium; and

the computer program in accordance with any of Claims 27 and 28 stored in the computer readable medium.